

## ABSTRACT

Apparatus and methods are disclosed for controlling slurry flow in a chemical mechanical polishing apparatus for planarizing an object to be polished by supplying slurry on a grinding pad through a slurry injection nozzle. A disclosed apparatus includes a slurry supply unit; a photo image sensor mounted to one side of a by-pass; a slurry measuring unit for analyzing an image captured by the photo image sensor to measure the sizes of particles and the density of the slurry; and a slurry flow control unit. The disclosed apparatus and methods perform real-time flow control of slurry fed to the injection nozzle through the slurry supply line.